Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled data based on original data using

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: METALUX

Report Number: P975362

Luminaire Tested: 22ENA-LD2-25-UNV-L930-CD1

Issue Date: 03/13/2025

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P975362
Test Lab:	INNOVATION CENTER(P3)
Issue Date:	03/13/2025
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	METALUX
Catalog Number:	22ENA-LD2-25-UNV-L930-CD1
Description:	METALUX ENCOUNTER 2x2 2500LM PACKAGE 90CRI 3000K AIR VENTED TROFFER
Light Source:	3000K CCT, 90 CRI LEDS
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	2503.9 lumens
Efficiency:	N/A
Efficacy:	125.2 lumens/watt
Spacing Criteria (0/90/45):	1.27 / 1.29 / 1.39
Luminous Opening:	Rectangular (W 1.67' x L: 1.83' x H: 0')
CIE Type:	Direct

Input Watts (W):	20
Input Voltage (V):	120
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	NR
Total Harmonic Distortion (THDi):	NR
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	28.75 FT

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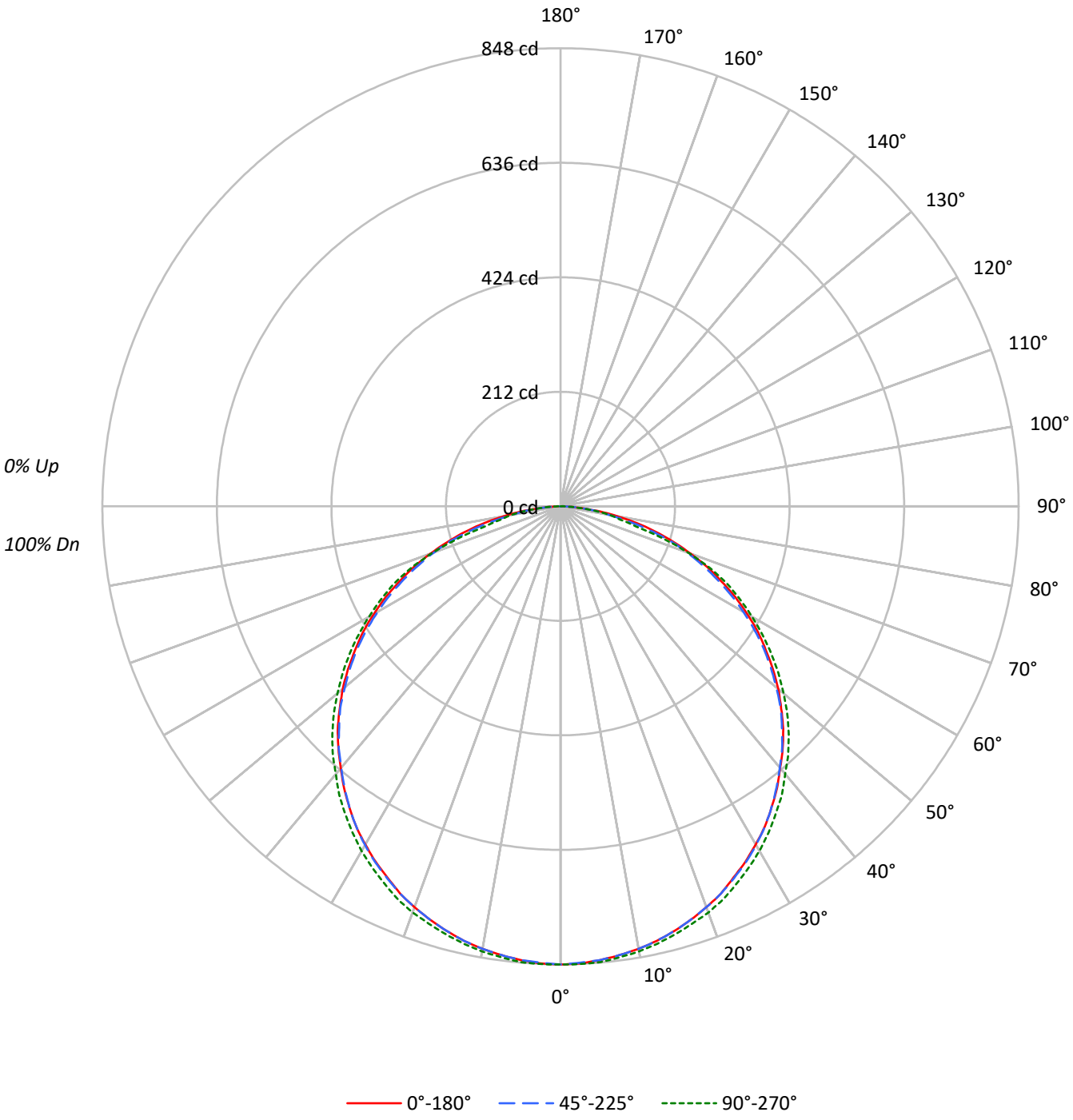
Scaled Data Report

TEST NUMBER: P975362
CATALOG NUMBER: 22ENA-LD2-25-UNV-L930-CD1

Luminous Intensity Polar Plot



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Scaled Data Report

TEST NUMBER: P975362
CATALOG NUMBER: 22ENA-LD2-25-UNV-L930-CD1

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20			20			20
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	99	95	106	101	98	94	97	94	91	93	91	88	90	88	86	83
2	99	90	83	77	96	88	82	76	85	79	75	81	77	73	78	75	71	69
3	90	79	71	64	87	77	70	63	74	68	62	72	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	64	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	69	56	47	40	68	55	46	40	53	46	40	51	45	39	50	44	39	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	33
8	60	46	38	32	58	45	37	32	44	37	31	43	36	31	42	36	31	29
9	56	42	34	28	54	42	34	28	41	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	39	31	26	38	30	26	37	30	25	36	30	25	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2988	2988	2988
5°	2982	2982	2995
10°	2975	2975	2993
15°	2968	2968	2992
20°	2961	2961	2999
25°	2947	2952	2996
30°	2940	2945	2996
35°	2928	2928	2988
40°	2909	2904	2974
45°	2905	2887	2975
50°	2884	2856	2953
55°	2850	2819	2928
60°	2814	2751	2885
65°	2737	2663	2843
70°	2638	2559	2599
75°	2485	2329	1986
80°	2187	1828	1903
85°	1588	1540	1487

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
Vertical Angle: 45°
Luminance: 2975 cd/sqm

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TEST NUMBER: P975362
CATALOG NUMBER: 22ENA-LD2-25-UNV-L930-CD1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.2	3.2
10°-20°	230.3	9.2
20°-30°	351.5	14.0
30°-40°	428.1	17.1
40°-50°	450.7	18.0
50°-60°	414.9	16.6
60°-70°	322.9	12.9
70°-80°	179.2	7.2
80°-90°	46.1	1.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	662.0	26.4
0°-40°	1090.1	43.5
0°-60°	1955.7	78.1
0°-90°	2503.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2503.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	848	848	848	848	848	
5°	843	843	843	846	847	80
15°	814	814	814	818	820	230
25°	758	760	760	766	771	350
35°	681	681	681	688	695	426
45°	583	580	580	588	597	449
55°	464	463	459	467	477	415
65°	328	324	320	330	341	326
75°	183	179	171	152	146	192
85°	39	37	38	37	37	49
90°	0	0	0	0	0	

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TEST NUMBER: P975362
CATALOG NUMBER: 22ENA-LD2-25-UNV-L930-CD1

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	*848.2*	*848.2*	*848.2*	*848.2*	*848.2*
2.5°	*847.0*	845.7	845.7	848.2	848.2
5°	*843.2*	843.2	843.2	845.7	847.0
7.5°	*838.0*	838.0	838.0	841.9	841.9
10°	*831.8*	830.5	831.8	834.3	836.8
12.5°	*824.1*	822.8	824.1	826.6	829.2
15°	*813.9*	813.9	813.9	817.8	820.3
17.5°	*802.6*	801.3	802.6	806.4	810.2
20°	*789.9*	789.9	789.9	794.9	800.1
22.5°	*776.0*	774.7	776.0	782.3	787.4
25°	*758.1*	759.5	759.5	765.8	770.8
27.5°	*741.7*	740.4	742.9	748.1	754.4
30°	*722.7*	722.7	724.0	730.4	736.6
32.5°	*703.7*	702.5	703.7	710.0	716.4
35°	*680.9*	680.9	680.9	688.5	694.8
37.5°	*658.0*	656.7	656.7	664.4	673.2
40°	*632.6*	631.4	631.4	640.3	646.7
42.5°	*608.6*	607.4	607.4	614.9	623.8
45°	*583.2*	579.5	579.5	588.3	597.2
47.5°	*554.1*	551.6	552.8	560.4	569.3
50°	*526.2*	522.4	521.2	530.0	538.9
52.5°	*495.8*	494.5	490.6	498.3	508.5
55°	*464.0*	462.8	459.0	466.6	476.7
57.5°	*433.6*	429.8	426.0	432.3	443.8
60°	*399.4*	395.5	390.5	399.4	409.5
62.5°	*365.1*	360.1	356.3	363.9	375.3
65°	*328.4*	324.5	319.5	329.7	341.1
67.5°	*294.1*	290.4	284.1	292.9	300.5
70°	*256.1*	251.0	248.5	249.8	252.3
72.5°	*219.4*	216.7	213.0	202.9	200.3
75°	*182.6*	178.8	171.1	152.2	145.9
77.5°	*145.9*	143.2	129.3	112.8	112.8
80°	*107.8*	106.5	90.1	92.6	93.8
82.5°	*73.5*	71.0	66.0	64.7	64.7
85°	*39.3*	36.8	38.1	36.8	36.8
87.5°	*15.2*	15.2	16.5	15.2	15.2
90°	*0.0*	0.0	0.0	0.0	0.0

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LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-457-1

Test Date: 07/15/2025

Luminaire Tested: 14EN-LD2-51-UNV-L930-CD1-U

Data in this report applies to families of products including 14EN-LD2-51-UNV-L930-CD1-U

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

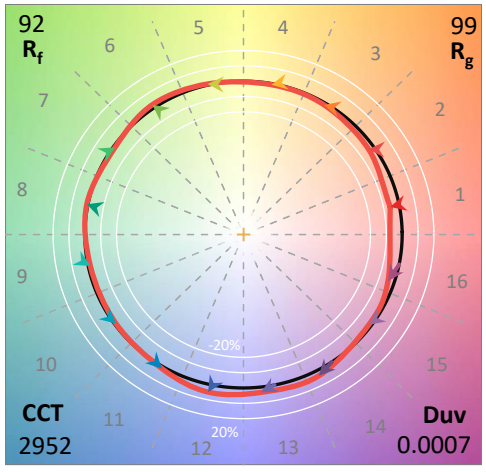
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2506-457-1
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	07/15/2025
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	Metalux
Catalog Number:	**14EN-LD2-51-UNV-L930-CD1-U**
Description:	1x4 ENCOUNTER 5100LM WITH LIGHTNING BOARDS

Spectral Parameters

CCT (K):	2952
CIE u':	0.2521
CIE v':	0.5233
Duv:	0.0007
CIE x:	0.4415
CIE y:	0.4074
CIE z:	0.1512
Peak Wavelength (nm):	630
Dominant Wavelength (nm):	582
Purity:	54.78275
Rf:	91.8
Rg:	99.1

CRI (Ra):	93.2
R1:	93.9
R2:	96.6
R3:	98.6
R4:	94.8
R5:	93.9
R6:	96.9
R7:	91.0
R8:	79.7
R9:	53.0
R10:	91.2
R11:	96.9
R12:	85.5
R13:	94.5
R14:	98.2
R15:	88.3



Test Conditions

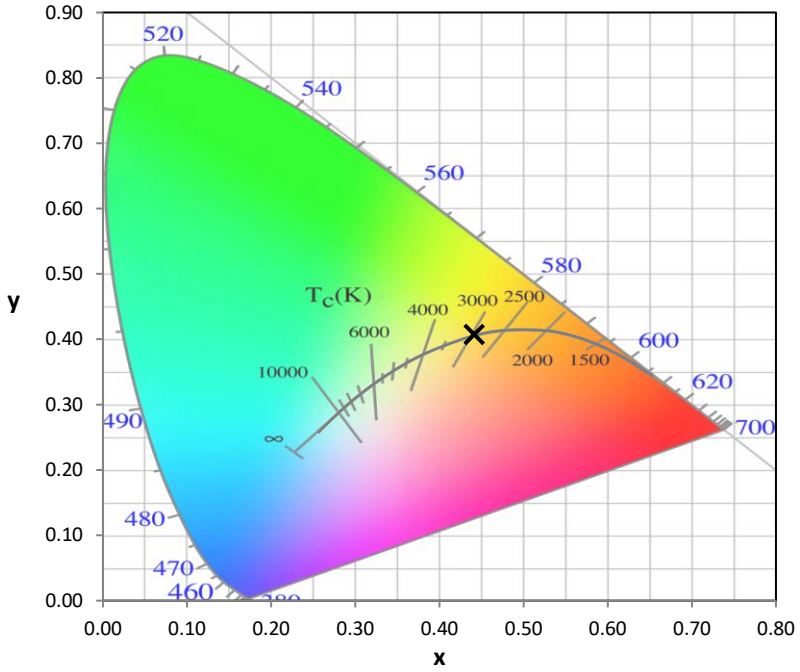
Stabilization Time:	33M
Operation Time:	1H 33M
Sphere Temperature (°C):	25.0

REPORT NUMBER: SP1-2506-457-1

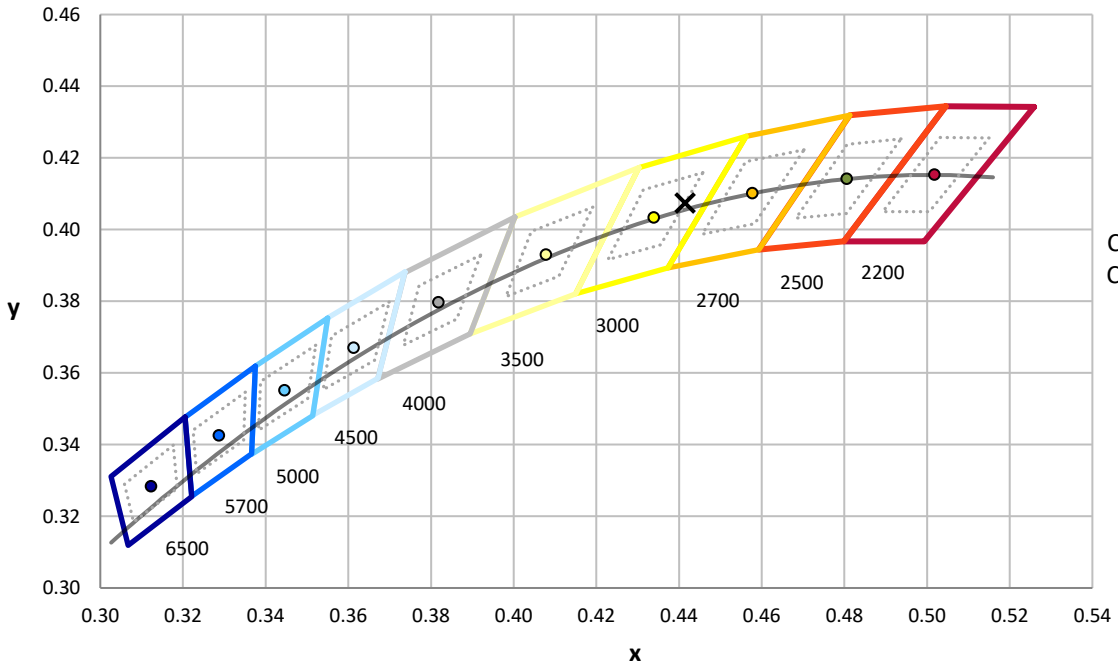
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	1/21/2025	1/21/2026
AC Power Source	CHROMA 61603 IN0063	10/22/2024	10/22/2025
DC Power Source	AGILENT E3634A IN0208	10/22/2024	10/22/2025
Sphere Thermometer	ONSET IN0085	10/22/2024	10/22/2025
Room Thermometer	ONSET IN0046	10/22/2024	10/22/2025

REPORT NUMBER: SP1-2506-457-1

CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles

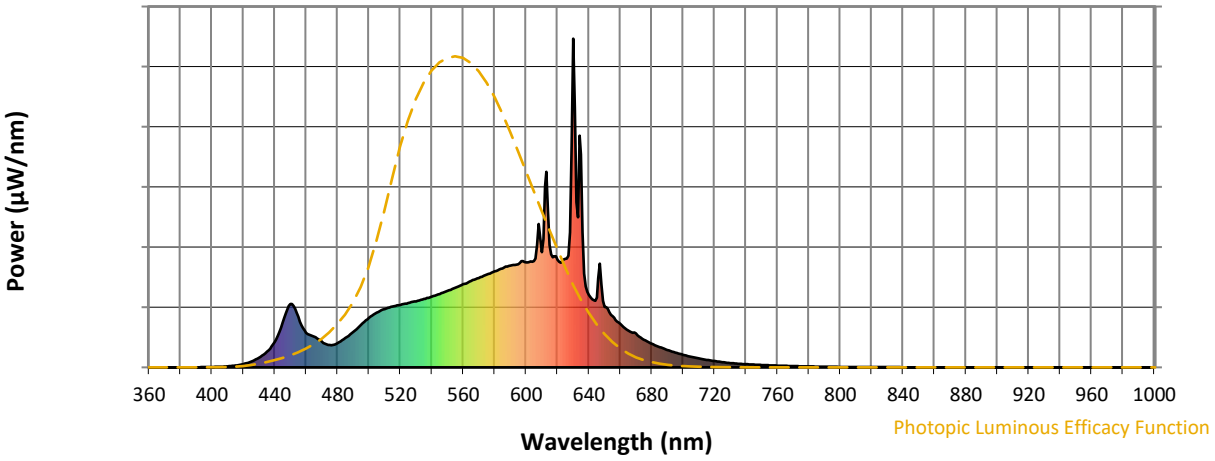


CCT = 2952K
CIE x = 0.4415
CIE y = 0.4074
Duv = 0.0007

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2506-457-1

Photopic Flux vs. Wavelength

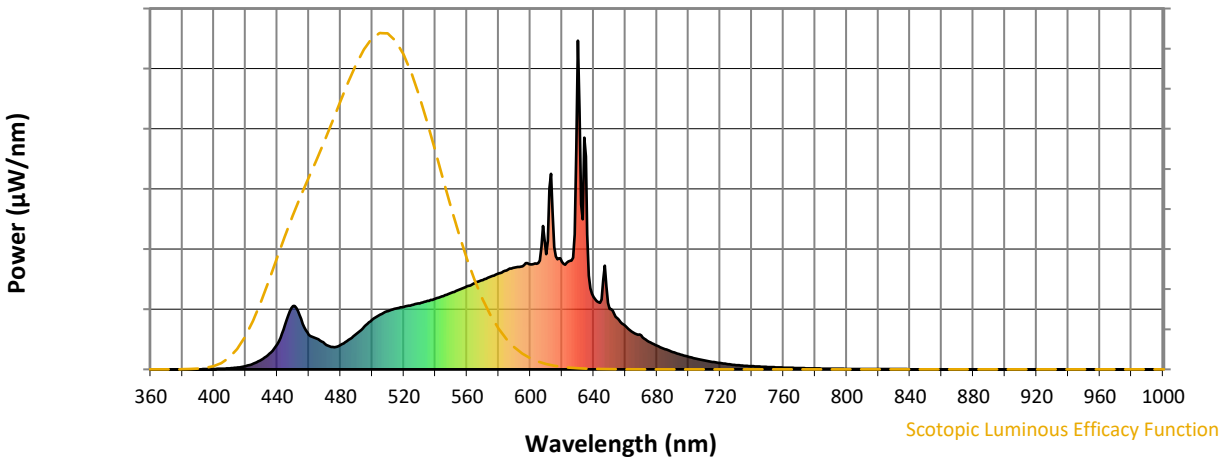


Photopic Lumens: NR

λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)
360	0	NR	490	108	NR	620	327	NR	750	7	NR	880	0	NR
365	0	NR	495	130	NR	625	330	NR	755	6	NR	885	0	NR
370	0	NR	500	150	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	166	NR	635	648	NR	765	5	NR	895	0	NR
380	0	NR	510	177	NR	640	220	NR	770	4	NR	900	0	NR
385	0	NR	515	185	NR	645	212	NR	775	3	NR	905	0	NR
390	0	NR	520	190	NR	650	184	NR	780	3	NR	910	0	NR
395	1	NR	525	196	NR	655	156	NR	785	2	NR	915	0	NR
400	1	NR	530	201	NR	660	133	NR	790	2	NR	920	0	NR
405	2	NR	535	208	NR	665	112	NR	795	2	NR	925	0	NR
410	3	NR	540	216	NR	670	103	NR	800	1	NR	930	0	NR
415	5	NR	545	223	NR	675	84	NR	805	1	NR	935	0	NR
420	10	NR	550	233	NR	680	72	NR	810	1	NR	940	0	NR
425	17	NR	555	243	NR	685	62	NR	815	1	NR	945	0	NR
430	29	NR	560	253	NR	690	53	NR	820	1	NR	950	0	NR
435	47	NR	565	262	NR	695	45	NR	825	1	NR	955	0	NR
440	77	NR	570	272	NR	700	38	NR	830	1	NR	960	0	NR
445	136	NR	575	282	NR	705	32	NR	835	1	NR	965	0	NR
450	193	NR	580	292	NR	710	27	NR	840	0	NR	970	0	NR
455	153	NR	585	301	NR	715	23	NR	845	0	NR	975	0	NR
460	105	NR	590	310	NR	720	19	NR	850	0	NR	980	0	NR
465	94	NR	595	314	NR	725	16	NR	855	0	NR	985	0	NR
470	78	NR	600	320	NR	730	13	NR	860	0	NR	990	0	NR
475	68	NR	605	323	NR	735	11	NR	865	0	NR	995	0	NR
480	74	NR	610	351	NR	740	10	NR	870	0	NR	1000	0	NR
485	89	NR	615	372	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2506-457-1

Scotopic Flux vs. Wavelength

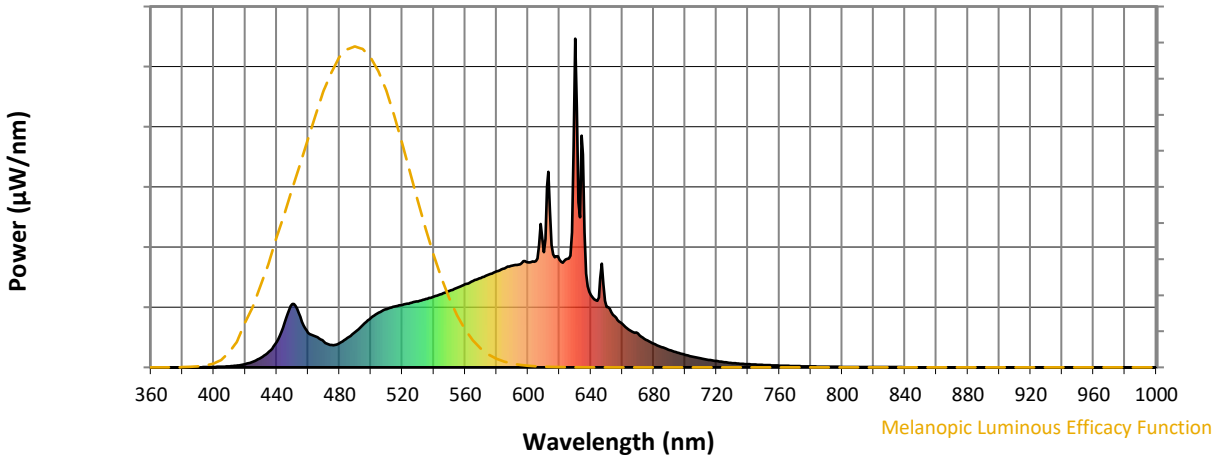


Scotopic Lumens: NR **S/P: 1.4**

λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)
360	0	NR	490	108	NR	620	327	NR	750	7	NR	880	0	NR
365	0	NR	495	130	NR	625	330	NR	755	6	NR	885	0	NR
370	0	NR	500	150	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	166	NR	635	648	NR	765	5	NR	895	0	NR
380	0	NR	510	177	NR	640	220	NR	770	4	NR	900	0	NR
385	0	NR	515	185	NR	645	212	NR	775	3	NR	905	0	NR
390	0	NR	520	190	NR	650	184	NR	780	3	NR	910	0	NR
395	1	NR	525	196	NR	655	156	NR	785	2	NR	915	0	NR
400	1	NR	530	201	NR	660	133	NR	790	2	NR	920	0	NR
405	2	NR	535	208	NR	665	112	NR	795	2	NR	925	0	NR
410	3	NR	540	216	NR	670	103	NR	800	1	NR	930	0	NR
415	5	NR	545	223	NR	675	84	NR	805	1	NR	935	0	NR
420	10	NR	550	233	NR	680	72	NR	810	1	NR	940	0	NR
425	17	NR	555	243	NR	685	62	NR	815	1	NR	945	0	NR
430	29	NR	560	253	NR	690	53	NR	820	1	NR	950	0	NR
435	47	NR	565	262	NR	695	45	NR	825	1	NR	955	0	NR
440	77	NR	570	272	NR	700	38	NR	830	1	NR	960	0	NR
445	136	NR	575	282	NR	705	32	NR	835	1	NR	965	0	NR
450	193	NR	580	292	NR	710	27	NR	840	0	NR	970	0	NR
455	153	NR	585	301	NR	715	23	NR	845	0	NR	975	0	NR
460	105	NR	590	310	NR	720	19	NR	850	0	NR	980	0	NR
465	94	NR	595	314	NR	725	16	NR	855	0	NR	985	0	NR
470	78	NR	600	320	NR	730	13	NR	860	0	NR	990	0	NR
475	68	NR	605	323	NR	735	11	NR	865	0	NR	995	0	NR
480	74	NR	610	351	NR	740	10	NR	870	0	NR	1000	0	NR
485	89	NR	615	372	NR	745	8	NR	875	0	NR			

REPORT NUMBER: SP1-2506-457-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 2.7**

λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)	λ (nm)	Power W^/nm	Lumens (ϕ/nm)
360	0	NR	490	108	NR	620	327	NR	750	7	NR	880	0	NR
365	0	NR	495	130	NR	625	330	NR	755	6	NR	885	0	NR
370	0	NR	500	150	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	166	NR	635	648	NR	765	5	NR	895	0	NR
380	0	NR	510	177	NR	640	220	NR	770	4	NR	900	0	NR
385	0	NR	515	185	NR	645	212	NR	775	3	NR	905	0	NR
390	0	NR	520	190	NR	650	184	NR	780	3	NR	910	0	NR
395	1	NR	525	196	NR	655	156	NR	785	2	NR	915	0	NR
400	1	NR	530	201	NR	660	133	NR	790	2	NR	920	0	NR
405	2	NR	535	208	NR	665	112	NR	795	2	NR	925	0	NR
410	3	NR	540	216	NR	670	103	NR	800	1	NR	930	0	NR
415	5	NR	545	223	NR	675	84	NR	805	1	NR	935	0	NR
420	10	NR	550	233	NR	680	72	NR	810	1	NR	940	0	NR
425	17	NR	555	243	NR	685	62	NR	815	1	NR	945	0	NR
430	29	NR	560	253	NR	690	53	NR	820	1	NR	950	0	NR
435	47	NR	565	262	NR	695	45	NR	825	1	NR	955	0	NR
440	77	NR	570	272	NR	700	38	NR	830	1	NR	960	0	NR
445	136	NR	575	282	NR	705	32	NR	835	1	NR	965	0	NR
450	193	NR	580	292	NR	710	27	NR	840	0	NR	970	0	NR
455	153	NR	585	301	NR	715	23	NR	845	0	NR	975	0	NR
460	105	NR	590	310	NR	720	19	NR	850	0	NR	980	0	NR
465	94	NR	595	314	NR	725	16	NR	855	0	NR	985	0	NR
470	78	NR	600	320	NR	730	13	NR	860	0	NR	990	0	NR
475	68	NR	605	323	NR	735	11	NR	865	0	NR	995	0	NR
480	74	NR	610	351	NR	740	10	NR	870	0	NR	1000	0	NR
485	89	NR	615	372	NR	745	8	NR	875	0	NR			

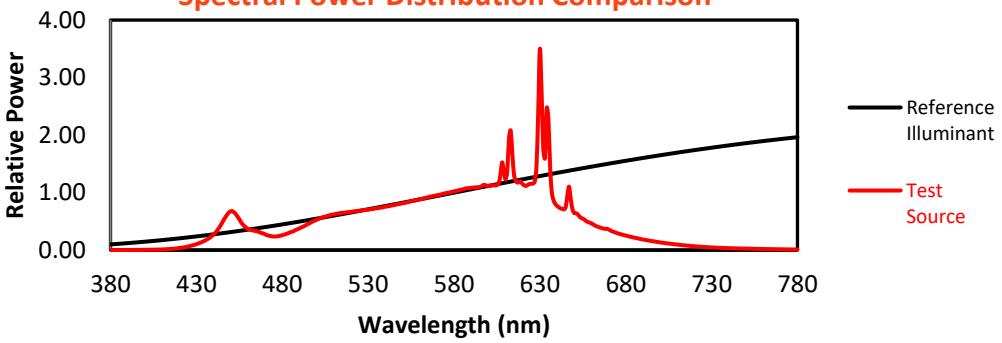
REPORT NUMBER: SP1-2506-457-1

TM-30-18

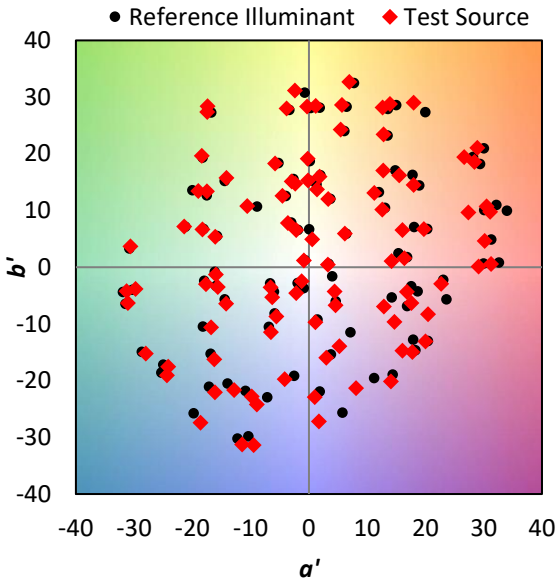
Summary

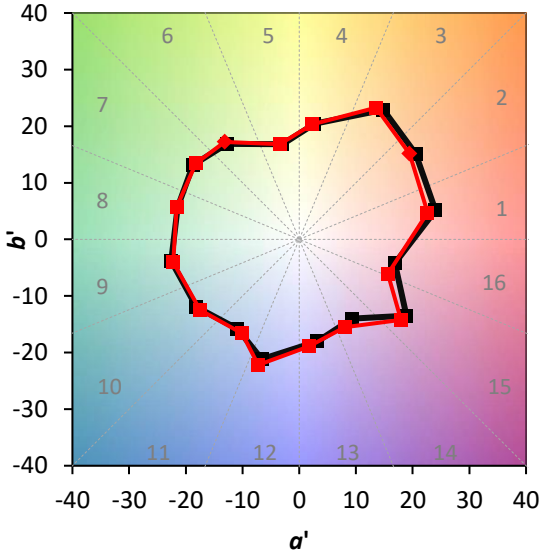
R_f = 91.8
R_g = 99.1
CIE R_a = 93.2
R_9 = 53.0

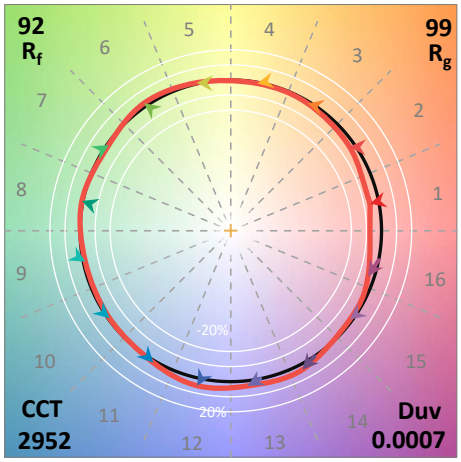
Spectral Power Distribution Comparison

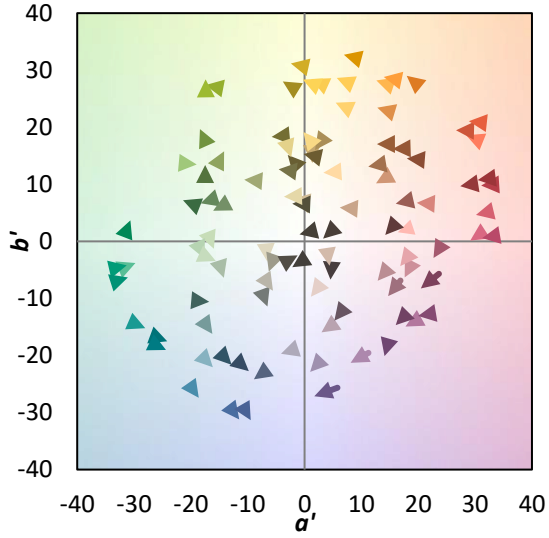


Color Vector Graphics









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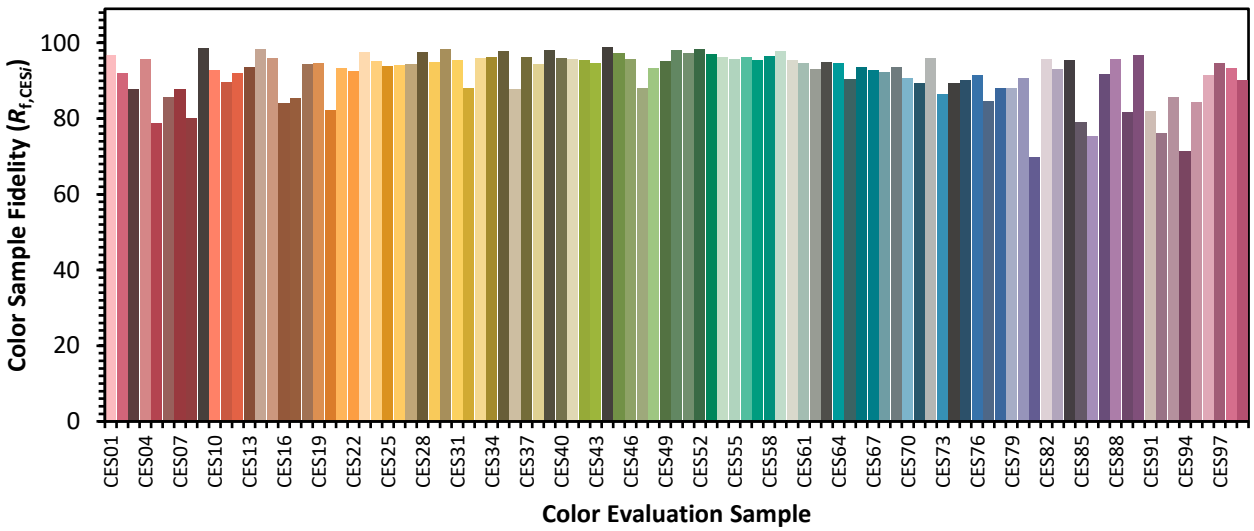
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 86	CES26 = 94	CES51 = 97	CES76 = 91
CES02 = 63	CES27 = 94	CES52 = 98	CES77 = 85
CES03 = 32	CES28 = 98	CES53 = 97	CES78 = 88
CES04 = 70	CES29 = 95	CES54 = 96	CES79 = 88
CES05 = 50	CES30 = 98	CES55 = 96	CES80 = 91
CES06 = 51	CES31 = 95	CES56 = 96	CES81 = 70
CES07 = 43	CES32 = 88	CES57 = 96	CES82 = 96
CES08 = 42	CES33 = 96	CES58 = 97	CES83 = 93
CES09 = 29	CES34 = 96	CES59 = 98	CES84 = 95
CES10 = 76	CES35 = 98	CES60 = 95	CES85 = 79
CES11 = 59	CES36 = 88	CES61 = 95	CES86 = 75
CES12 = 65	CES37 = 96	CES62 = 93	CES87 = 92
CES13 = 44	CES38 = 94	CES63 = 95	CES88 = 96
CES14 = 74	CES39 = 98	CES64 = 95	CES89 = 82
CES15 = 72	CES40 = 96	CES65 = 90	CES90 = 97
CES16 = 48	CES41 = 96	CES66 = 94	CES91 = 82
CES17 = 50	CES42 = 95	CES67 = 93	CES92 = 76
CES18 = 57	CES43 = 95	CES68 = 92	CES93 = 86
CES19 = 72	CES44 = 99	CES69 = 93	CES94 = 71
CES20 = 67	CES45 = 97	CES70 = 91	CES95 = 84
CES21 = 86	CES46 = 96	CES71 = 89	CES96 = 91
CES22 = 79	CES47 = 88	CES72 = 96	CES97 = 95
CES23 = 92	CES48 = 93	CES73 = 86	CES98 = 93
CES24 = 91	CES49 = 95	CES74 = 89	CES99 = 90
CES25 = 72	CES50 = 98	CES75 = 90	



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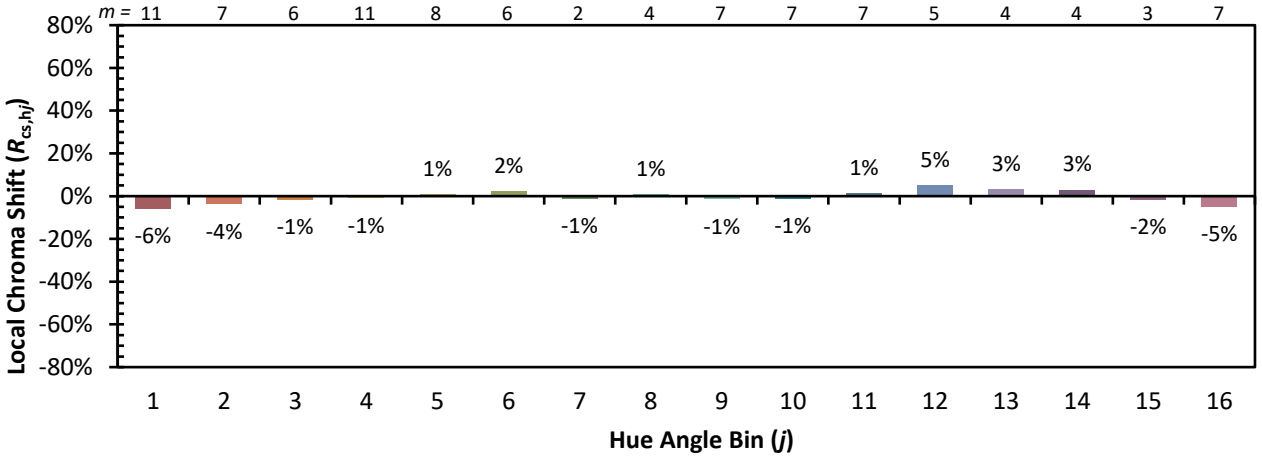
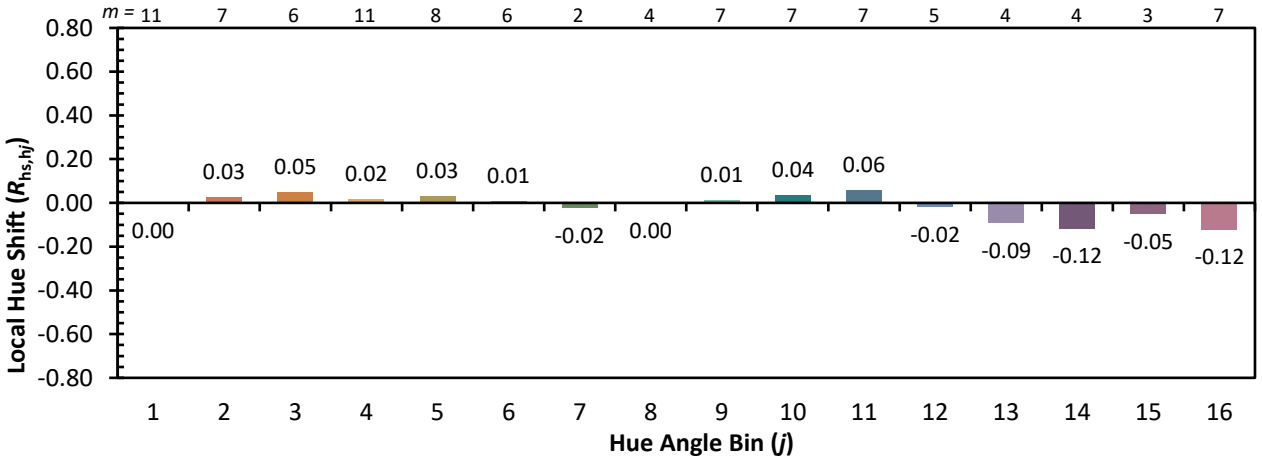
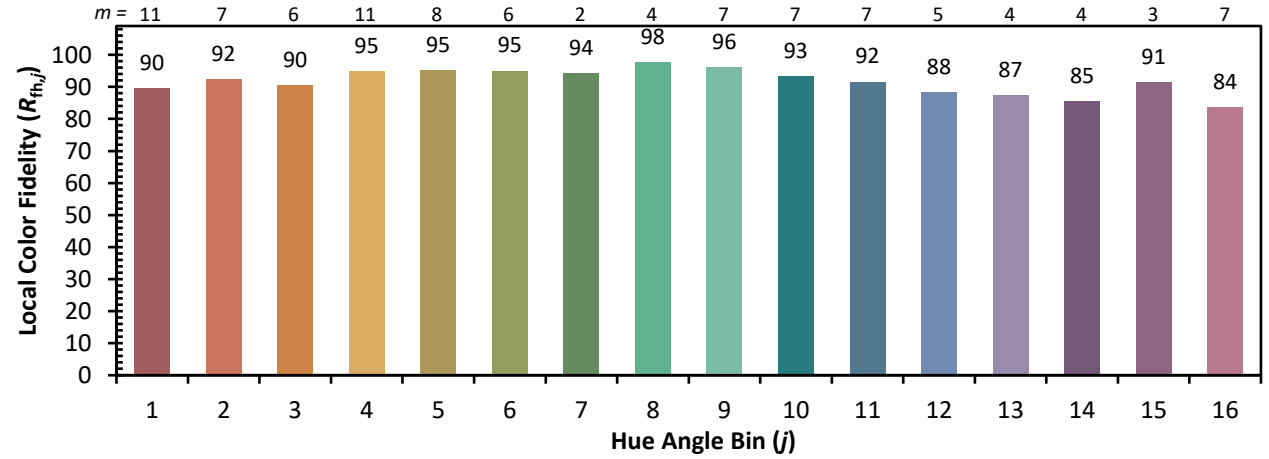
Color Rendition by Hue-Angle Bin







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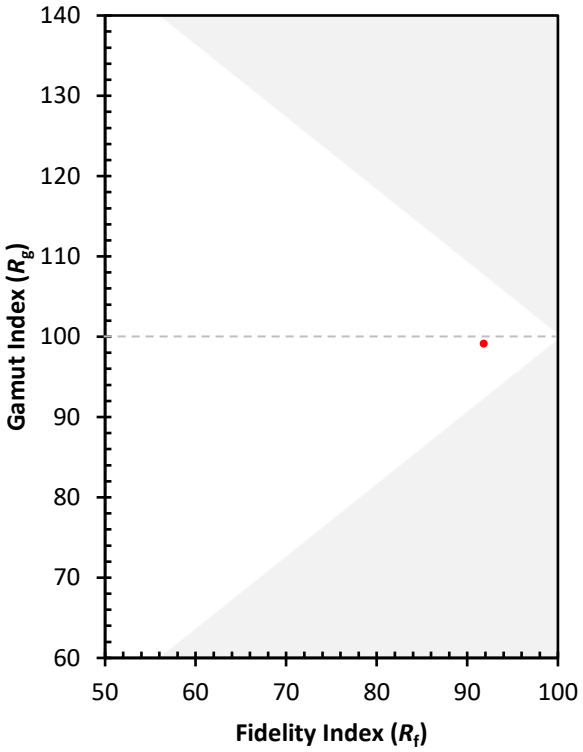
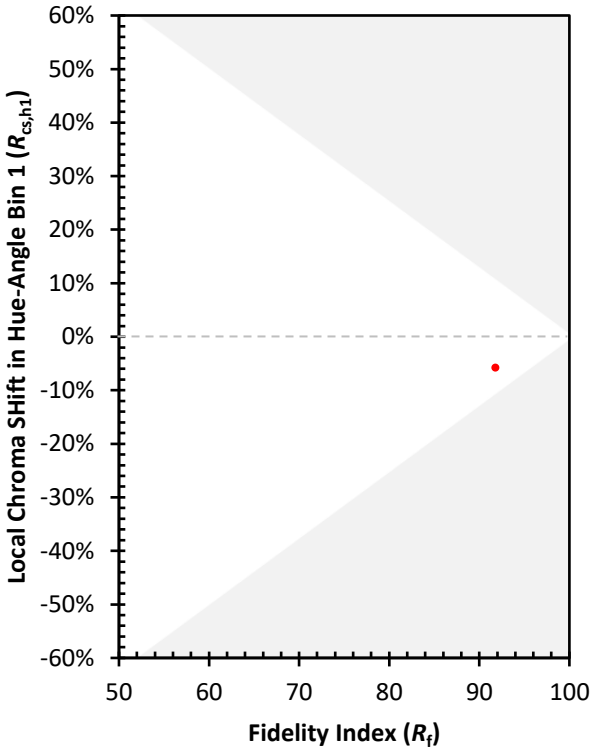
Measure Comparisons





(END OF REPORT)